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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,675	06/28/2001	Lutz Melchior	IT-273	6394

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LERNER AND GREENBERG, P.A.
PATENT ATTORNEYS AND ATTORNEYS AT LAW
Post Office Box 2480
Hollywood, FL 33020-2480

EXAMINER

WOOD, KEVIN S

ART UNIT	PAPER NUMBER
2874	

DATE MAILED: 11/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/894,675

Applicant(s)

MELCHIOR ET AL. 

Examiner

Kevin S Wood

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-27 and 29, 30-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25 and 33 is/are allowed.
- 6) ☒ Claim(s) 1-5, 15-19, 24, 26, 27, 29, 31, 32 and 34 is/are rejected.
- 7) ☒ Claim(s) 7-14 and 20-23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers


- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.

- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: 

DETAILED ACTION

Response to Amendment

1. This action is responsive to amendment B filed 10/1/02. Claim 30 is now canceled and no new claims were added. Claims 1-5, 7-27, 29, 31-34 are now pending in the application.
2. Based on the applicant's amendment, the art rejection of claim 30 is moot because claim 30 is canceled.
3. The indication of allowability of claims 1-5, 7-24, 26, 27, 29, 31, 32 and 34 is withdrawn. It is the belief of the examiner that some of the subject matter previously indicated as allowable, would have been obvious to one having ordinary skill in the art at the time the invention was made. Therefore, the finality of the last office action is withdrawn. The examiner regrets any inconvenience that this decision has caused.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 recites the limitation "said mounting tube" in the second line. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-5, 17-19, 24, 26-27 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,701,012 to Kaiser et al. in view of U.S. Patent No. 5,867,617 to Pan et al.

Referring to claims 1 and 31, Kaiser et al. discloses all the limitations of the claimed invention, except Kaiser et al. does not specifically disclose a first and second glass ferrules for receiving the first and second optical waveguide sections. Pan et al. discloses the use of a glass ferrule (20) with an inclined end surface that corresponds to the angled end surface of an optical fiber (14). It is known in the art to use a ferrule for the purpose of holding and aligning the ends of an optical fiber within a structure. It

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would have been obvious to one having ordinary skill in the art at the time the invention was made to use a glass ferrule to support the ends of the optical waveguides, since it was known in the art that ferrules are capable of holding and aligning optical waveguides within a structure.

Referring to claim 2, Kaiser et al. in view of Pan et al. discloses all the limitations of the claimed invention. Kaiser et al. discloses wavelength filter layers (101, 102, 103, 104) between the inclined surfaces of the optical waveguides (105, 106, 107, 108).

Referring to claims 3 and 4, Kaiser et al. in view of Pan et al. discloses all the limitations of the claimed invention. Kaiser et al. discloses that the inclined surfaces of the optical waveguides (105, 106, 107, 108) are coplanar.

Referring to claim 5, Kaiser et al. in view of Pan et al. discloses all the limitations of the claimed invention. Kaiser et al. discloses that the inclined surfaces of the optical waveguides form an angle of approximately 45 degrees with respect to the optical axis of the optical waveguide (30).

Referring to claim 17 and 18, Kaiser et al. in view of Pan et al. discloses all the limitations of the claimed invention. Kaiser et al. discloses a plurality of waveguide sections (105, 106, 107, 108) located along the optical axis.

Referring to claim 19, Kaiser et al. in view of Pan et al. discloses all the limitations of the claimed invention. Kaiser et al. discloses that the optical components (24, 25, 26, 27, 28) that are capable of transmitting optical light into the optical waveguide. The optical components have an optical axis that runs essentially perpendicular to the optical axis of the optical waveguide (30).

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Referring to claim 24, Kaiser et al. in view of Pan et al. discloses all the limitations of the claimed invention. Kaiser et al. discloses coupling lenses (12,13,14,15,16) located in the beam path between the optical components (24,25,26,27,28) and the inclined end surfaces.

Referring to claim 26, Kaiser et al. in view of Pan et al. discloses all the limitations of the claimed invention. Kaiser et al. discloses that the device is suitable for single mode applications. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the waveguides single mode.

Referring to claim 27, Kaiser et al. in view of Pan et al. discloses all the limitations of the claimed invention. Kaiser et al. discloses a plurality of waveguide sections (105,106,107,108,109) and a plurality of wavelength selective coatings (101,102,103,104) that are selective for different wavelengths.

9. Claims 15, 29, 32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,701,012 to Kaiser et al.

Referring to claim 15 and 32, Kaiser et al. discloses all the limitations of the claimed invention, except Kaiser et al. does not specifically disclose an immersion means filling a gap between the first and second waveguides, where the index of refraction of the immersion means matches the index of refraction of the waveguides. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to fill any gaps between the optical fibers with an index matching

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material since it is known in the art that providing an index matching material between coupled waveguides minimizes optical losses.

Referring to claim 29 and 34, Kaiser et al. discloses all the limitations of the claimed invention, except Kaiser et al. does not specifically disclose that the filter layers are a 50/50 beam splitter. It would have been obvious to one having ordinary skill in the art at the time the invention was made use a 50/50 beam splitter since it was known in the art that a 50/50 beam splitter divides an signal into two identical optical signals.

Allowable Subject Matter

10. Claim 25 and 33 are allowed.

11. Claims 7-14 and 20-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Claim 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claims 7-14, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose an electro-optical module for transmitting and/or receiving light of a plurality of optical data channels as claimed,

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including a mounting tube that receives the first and second glass ferrules and axially positions the first glass ferrule with respect to the second glass ferrule.

Referring to claims 16, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose an electro-optical module for transmitting and/or receiving light of a plurality of optical data channels as claimed, including a mounting tube formed with a radial opening for insertion of an immersion means.

Referring to claims 20-23, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose an electro-optical module for transmitting and/or receiving light of a plurality of optical data channels as claimed, including a TO-can holding the optical component.

Referring to claims 25 and 33, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose the device as claimed, including the first optical waveguide core being larger than the core of the second optical waveguide.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone


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numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.

KSW
October 24, 2002


Ben Healy
Receptionist